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THESIS

Measurement of Recall With and Without Text

Submitted by

Elizabeth Howe

In Partial Fulfillment of Requirements for the

Degree of Master of Education

1943

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MEASUREMENT OF RECALL WITH AND WITHOUT TEXT

ACKNOWLEDGEMENT

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CHAPTER I

INTRODUCTION

Problem

It is the purpose of this study to compare the amount and accuracy of recall obtained from material read only once and material allowed to remain before the child constantly.

Introduction and Review of Previous Study

In this modern world there is continual evidence of the need for children to possess skill in comprehending material effectively after one reading. In average classroom situations daily reading experiences call for this. Children, upon completion of their first reading of a story or a selection, often are lead immediately into discussion or some form of comprehension check.

On the other hand, while the pupil works independently at his studies there is no actual method of determining the number of times he may find it necessary to reread for complete understanding.

In the construction of the majority of standardized group tests there is no provision for this skill measured as such. The tests are printed with the comprehension check directly below the reading selection thus enabling the child to

refer back to the paragraph for further aid in his recall if he so desires. In connection with this study the writer examined ten of the better known standardized silent reading tests to determine evidence, if any, of directing the pupil to read the material only once. The list of tests examined is as follows:

1. Detroit Reading Test III -- Grades 4-6
2. Durrell-Sullivan Reading Achievement Test -- Grades 3-6
3. Gates Silent Reading Test -- Grades 3-8
4. Iowa Silent Reading Tests -- Grades 4-9
5. Los Angeles Elementary Reading Tests -- Grades 3-8.
6. Munroe's Standardized Silent Reading Test -- (Revised) -- Grades 3, 4, and 5.
7. Nelson Silent Reading Test -- Grades 3-9.
8. New Standford Reading Test -- Grades 2-9.
9. Public School Achievement Test -- Grades 3-8.
10. Sangren-Woody Reading Test -- Grades 4-8.

In all but one of these tests the reading material was allowed to remain before the child constantly. The one exception was

a sub-test of the Iowa Silent Reading Test. This part test contained two lengthy selections for the pupil to read in a given time limit. When the time was called, the pupil turned his test booklet upside down and checked his recall in the form of multiple choice items, thus allowing no opportunity to reread the selection. No other test, however, allowed for this factor.

Turning from standardized tests to publications concerning tests and measurements this same element of only one reading is also taken for granted. Greene and Jorgensen[1] in their selection on Basic Reading Skills list nine skills to be considered as a basis for measuring silent reading. One of these skills is entitled "Remembrance of Material Read," yet they fail to further evaluate this term by specifying the number of readings considered adequate for remembrance.

Webb and Shotwell[2] call to mind the fact that there are many types of silent reading ability and each one requires a special type of measurement. Yet this important element of

[1]Greene, H. A., Jorgensen, A. N., and Gerberick, J. R., Measurement and Evaluation in the Elementary School; Longmans, Green and Co., New York, 1942.

[2]Webb, L. W., and Shotwell, A. M., Standard Tests in the Elementary School; Longand Smith Inc., New York, 1939.

ability to read material effectively the first time is not sufficiently provided for in standard measurements. The skill itself is probably the underlying factor for reading rate and comprehension in most standardized silent reading tests, but the construction of same makes this measurement invalid.

Broom[1] says that tests used in the elementary grades "should indicate speed of reading and the accuracy and difficulty level of pupils' comprehension during silent reading." Speed and comprehension are two major factors in reading and are inseparable. All research shows this to be true and tests attempt to measure them. There are, however, many factors which should be taken into consideration in administering tests. One of these factors is the number of times the pupil reads the material in order to comprehend. This factor seems all important in the field of reading although the research directly relating to this problem has been very limited.

What Yoakam[2] stated in 1929 appears to hold fairly true today. "It is curious that in the studies of silent reading no attention has been given directly to the determination of the effect of a single reading of different types of reading matter, because this would seem to be the first step in experimental

[1]Broom, M. C., Educational Measurements in the Elementary School; McGraw Hill Co., New York, 1939.

[2]Yoakam, Gerald A., "Reading and Study," Macmillan Co., New York, 1929.

work in reading." Although Yoakam suggests the need of further research dealing with this question, no definite study other than his own has been executed which directly relates to this problem. However, there are some conclusions to draw from studies directed toward other aims.

Germane[1] found in his study with elementary grade children that pupils who wrote a brief summary upon the completion of one reading were decidedly inferior to children who were allowed to reread the selections several times.

Dietze[2] measured the recall of factual material after a single reading taking pupils on a secondary level. Conclusions drawn from this study resulted in the outcome that the single reading was of very little value when recall was delayed.

Yoakam's study on "The Effect of a Single Reading"[3] directly pertinent to this problem found that a single reading of factual material had no efficient results for elementary grade children, the measurement of recall being as low as thirty-one percent of the total. When using material of a

[1]Germane, C. E., "The Value of Summarizing as Compared with Rereading the Same Article," Yearbook No. 20, N.S.S.E., 1919. Part II, pp. 108-112.

[2]Dietze, A. G., Factual Memory of Secondary School Pupils for a Short Article Which They Read a Single Term; Doctorate Thesis, University of Pittsburg, 1930.

[3]Ibid 2, p.4

narrative nature the results were considered relatively efficient with recall measuring seventy-eight percent of the total. Yoakam also measured the effect of a single reading on recall dalayed over a period of one or two weeks. These pupils recalled only about twenty-four percent.

Courtney[1] in his measurement of recall of reproduction versus recognition presented material to ninth grade children which they were directed to read only once. The results showed that these students tested reproduced forty-six percent of the amount read and identified seventy-nine percent. This is a considerable increase over total recall as obtained by Yoakam. Such a difference may be partially due to the difference in grade levels.

Good's study[2] on recall of one reading against two readings resulted in the superiority of the two readings. However, Good felt that this superiority was not justifiable in consideration of the additional time spent on the latter method. Twice as much time was needed for the two readings but the additional recall thus gained did not in any measure amount to double the recall obtained from one reading. This again was a study conducted on a secondary level therefore these results could not be assumed as parallel to studies

[1]Courtney, P. D., "Recall by Reproduction vs. Recognition," B. U. Thesis, 1941.

[2]Good, Carter V., "The Effect of a Single Reading Versus Two Readings of a Given Body of Material," Journal of Educational Method, vol V, pp. 325-329, April, 1926.

developed on an elementary grade level.

With the exception of Yoakam's experiment, the conclusions drawn from all of these studies are merely incidental to studies which had been drawn up with a different purpose in view. This writer has in mind one major interest, the comparison between recall of a single reading and recall of material before the pupil constantly as measured on an elementary level. The ability to comprehend effectively material read only once is a necessary skill with which an elementary school teacher should be concerned. The availability of a measurement for such a skill should be most helpful.

CHAPTER II

DESCRIPTION OF THE STUDY

Choice of Material

In order to carry out the purpose of this experiment, the measurement and comparison of recall with and without text, the writer made use of two forms, Am and Bm of the Iowa Silent Reading Tests for Grades 4 - 9.[1] These tests are composed of six sub-tests measuring three major aspects of silent reading ability: Rate of Reading at a Controlled Level of Comprehension; Comprehension of Words, Sentences, Paragraphs, and Longer Articles; and Ability to Use Skills Required in Locating Information.

The material for the experimental part of this study was taken from sub-test 4 entitled "Paragraph Comprehension." This part test consists of ten paragraphs of increasing difficulty covering material of a factual nature. Following each paragraph is a comprehension check including three questions of the multiple choice type. The first question requires recall of the main idea of the paragraph, the second and third questions relate to recall of details essential to the meaning of the paragraph.

[1]Greene, H. A., and Kelley, V. H., Iowa Silent Reading Tests New Edition Elementary Test for Grades 4-9, World Book Co.,1939.

This particular standard test was selected for this experiment as it is published in two forms allowing for two different types of presentation. In sub-test 4, on which the experiment was based, the paragraphs with their comprehension checks are printed in such a manner as to make it possible to mount each paragraph on a separate card with the comprehension check on the reverse side. These paragraphs are well constructed and the chances that a fifth grade child's score might be affected by previous knowledge of the subject matter are slight. Furthermore, this part test measures two types of comprehension: ability to select the central topic of the paragraph and the ability to identify details. From such data, the author believed it would prove interesting to compare these two types of recall according to the conditions of the experiment.

Subjects of the Study

This experiment was performed during the first week in June on 158 fifth grade children in a residential town fourteen miles from Boston. This town has a population of 15,000 is almost entirely residential with little or no industry, a negative amount of farming, and a decidedly minor foreign population. The majority of children possess a true New England background and represent families of a better than average socio-economic status. All the fifth grade children of the town's five elementary schools were tested thereby

allowing for representation of all sections of the town.

Figure 1, on the following page, shows the chronological age distribution of the 158 children tested. The range is four years, four months including ages from nine years, nine months to thirteen years, five months with a mean chronological age of ten years, eight months. The figures are as of June 1, 1943.

Figure 2, following, shows the distribution of reading grades for this group of fifth grade children. The range is very high, seven years, nine months. This includes reading grades from third grade, sixth month to the eleventh grade, fifth month with a mean reading grade of sixth grade, seventh month. This shows that the average reading grade for these children is within two months of being a whole year in advance of their actual grade placement. These reading grades were procured at the same time the experiment was performed. The two forms of the Iowa tests were given in their entirety consisting of part tests 1, 2, 3, 5, and 6 in addition to sub-test 4 on which the experimental study was treated. An average reading grade was then obtained from the combined total results of both forms.

It is noted that this group of children is, on the whole, slightly younger than the average chronological age of fifth grade children and above average in reading ability.

FIGURE 1

Distribution of Chronological Ages for 158 Fifth Grade Pupils

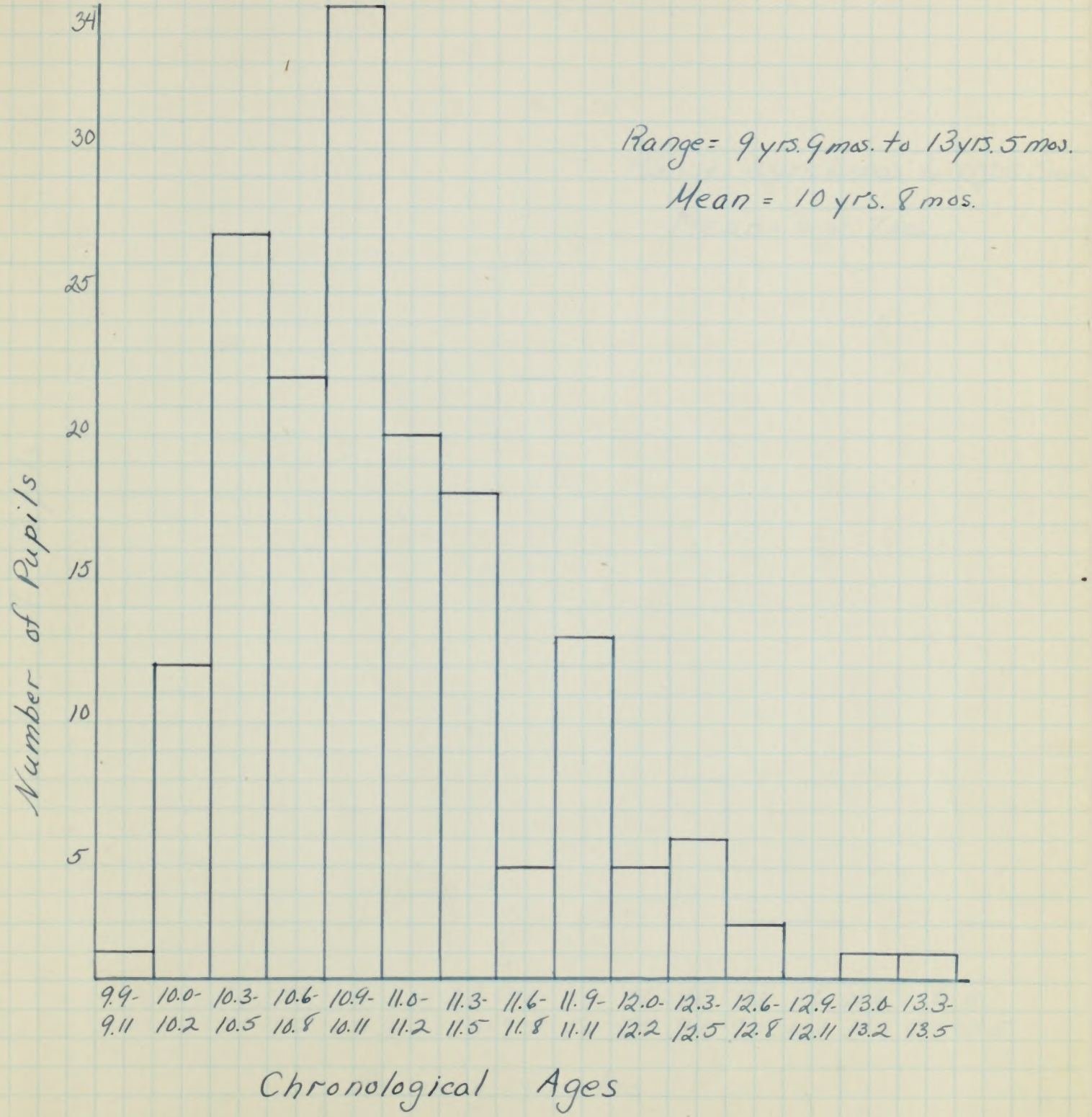
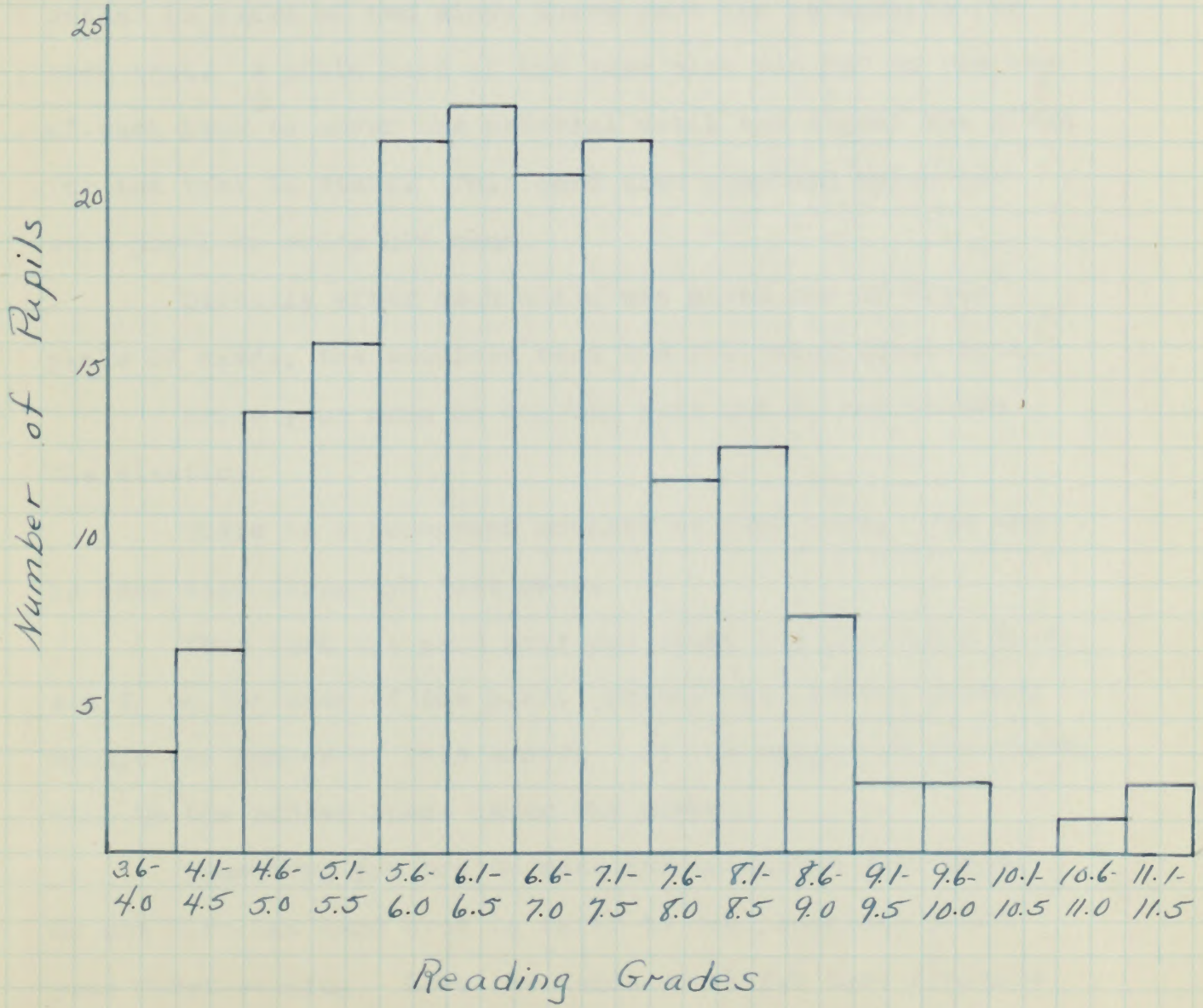


FIGURE 2

Distribution of Reading Grades for 158 Fifth Grade Pupils

Range = 3 grs. 6 mos. to 11 grs. 5 mos.

Mean = 6 gr. 7 mo.



Method of Presentation

To meet the requirements of this experiment each reading paragraph in sub-test 4 of the Iowa Silent Reading Test for Grades 4 - 9 was cut from the test booklet and mounted on a card, 3 inches by 4 1/2 inches. On the reverse of this card was mounted the comprehension check also taken directly from the test booklet. These cards were put together in packs of ten since there were ten paragraphs for each test. A plain card of the same size was put on the top of each pack to cover the material until the signal was given for the test to start. This card also provided space for each pupil to write his name.

Directly after each child was given one of these packs of cards, the examiner read the following directions.

Write your name on the top card but do not remove the elastic.

There is a paragraph mounted on each card. You are to read each paragraph just once.

Then turn the card over and study the questions A, B, and C, on the back of the card. Select the correct answer. Notice the number of this answer. In the margin at the right, fill in the answer space under the number.

Remember, you are to read the paragraph just once. Do not turn the card over to refer to the paragraph after your first reading. Keep the cards which you have finished

on your desk with the questions face up. You may start a new card whenever you are ready, taking them in the correct order.

(Be sure that each child understands what he is to do. It might be wise for the teacher to demonstrate at this point with a pack of cards.)

Now remove the elastic, and the card with your name on it, and begin.

(Allow 7 minutes for this part of the test.)

Thus the pupil read the paragraph only once, and the examiner took care that the recall on this experimental test was not aided by any opportunity to refer back to the original selection after the first reading.

In so far as possible these directions followed the exact wording of those used in the test proper. The examiners were instructed to clarify the directions so as to insure complete understanding on the part of every child as to just what procedure to follow.

The time allotment herein described is identical with that given in the directions of the standard Iowa test used. Factors such as time used in handling cards, or stimulation child received from same, were considered of no statistical importance by the writer.

This test was scored exactly according to the directions found in the teacher's manual of the standard Iowa test, one raw score point for every correct answer. The data of this study is based, for the most part, on these raw scores.

A few days later another form of the Iowa Silent Reading Test for Grades 4 - 9 was presented to each of the 158 children exactly as published to enable comparison of experimental test scores with the ordinary type of comprehension check. The two forms were rotated in order to correct any affect on the scores dependent upon the experimental test given either first or second. This necessitated building half of the experimental material on one form and half on the other.

For the purpose of this study the term "memory" and "text" shall be referred to, signifying respectively experimental data and the data obtained from the standard test followed verbatim.

CHAPTER III

ANALYSIS OF DATA

The data was analyzed to determine the comparison between:

1. Total recall obtained from memory and text.
2. Recall of the main idea in memory and text.
3. Recall of details in memory and text.
4. Amount of material read in memory and text.
5. Superior readers and poor readers in memory and in text.
6. Grade equivalents in memory and text.

The data was further analyzed to determine the correlation between:

1. Reading achievement and grade equivalents in memory.
2. Reading achievement and grade equivalents in text.
3. High achievement and memory in terms of grade equivalents.

4. High achievement and text in terms of grade equivalents.

5. Low achievement and memory in terms of grade equivalents.

6. Low achievement and text in terms of grade equivalents.

7. Amount of material read and memory scores.

8. Amount of material read and text scores.

The data for Comparisons 1 to 3 inclusive is based on raw scores. The data for Comparison 4 is based on the actual number of paragraphs read. The data for Comparison 5 and 6 is based on reading grade equivalents translated from raw scores as supplied in the teacher's manual for the Iowa Silent Reading Tests.

The data used in Correlations 1 to 6 inclusive is calculated from reading grade equivalents, while that used in Correlations 7 and 8 is calculated from number of paragraphs read and raw scores. All correlations were calculated according to the Pearson Product Moment Method.

TABLE I

Comparison of Total Recall in Memory and Text

Total Raw Scores						
Test	No.	Mean	S.D. Mean	Diff. Mean	S.D. Diff.	Critical Ratio
Memory	158	11.76	3.17	.16	4.43	.04
Text	158	11.92	3.1			

The mean score for the memory test was 11.76 as compared to 11.92 for the text. The difference between the means was .16 denoting a very slight favor for the text.

The critical ratio was .04 indicating that there are 52 chances in 100 that the difference is statistically significant. Further interpretation shows that this difference between the means is of no statistical importance.

TABLE II

Comparison of Recall of Main Idea in Memory and Text

Raw Scores of Main Idea						
Test	No.	Mean	S.D. Mean	Diff. Mean	S.D. Diff.	Critical Ratio
Memory	158	4.42	1.34	.26	1.88	.14
Text	158	4.16	1.32			

The mean score for the recall of the main idea in the test was 4.42 as compared to 4.16 for the text. The difference was .26 in favor of the memory test.

The critical ratio was .14 indicating that there are 56 chances in 100 that this difference is statistically significant. Further interpretation shows that this difference between the means is of no statistical importance.

TABLE II

Comparison of Recall of Main Idea in Memory and Test

Post	No.	Mean	S.D. Mean	Diff.	S.D. Diff.	Critical Ratio
Memory	100	4.42	1.86	.86	1.39	.14
Test	100	4.20	1.86			

TABLE III

Comparison of Recall of Details in Memory and Text

Raw Scores of Details						
Test	No.	Mean	S.D. Mean	Diff. Mean	S.D. Diff.	Critical Ratio
Memory	158	8.15	.018	.66	.03	2.0
Text	158	7.49	.018			

The mean score for the recall of details in the memory test was 8.15 as compared to 7.49 for the text. The difference was .66 in favor of the memory test.

The critical ratio was 2.0 indicating that there are 98 chances in 100 that the difference is statistically significant. Further interpretation shows that this difference between the means is of no statistical importance.

Memory	120	8.10	.018	.06	.05	2.0
Text	120	7.40	.010			

TABLE IV

Comparison of Amount of Material read in Memory and Text

Number of Selections Read						
Test	No.	Mean	S.D. Mean	Diff. Mean	S.D. Diff.	Critical Ratio
Memory	158	6.42	1.10	.02	1.56	.01
Text	158	6.44	1.10			

The mean number of selections read in the memory test was 6.42 as compared to 6.44 for the text. Such a small difference of .02 signifies that the amount of material read in the memory test was practically equal to the amount covered in the text.

The critical ratio was .01 indicating that there are 50 chances in 100 that the difference is statistically significant. Further interpretation shows that this difference between the means is of no statistical importance.

Figure 3

Distribution of Reading Grades for 50 Superior Fifth Grade Readers

Range = 6 gr. 8 mo. to 11 gr. 5 mo.

Mean = 8 gr. 1 mo.

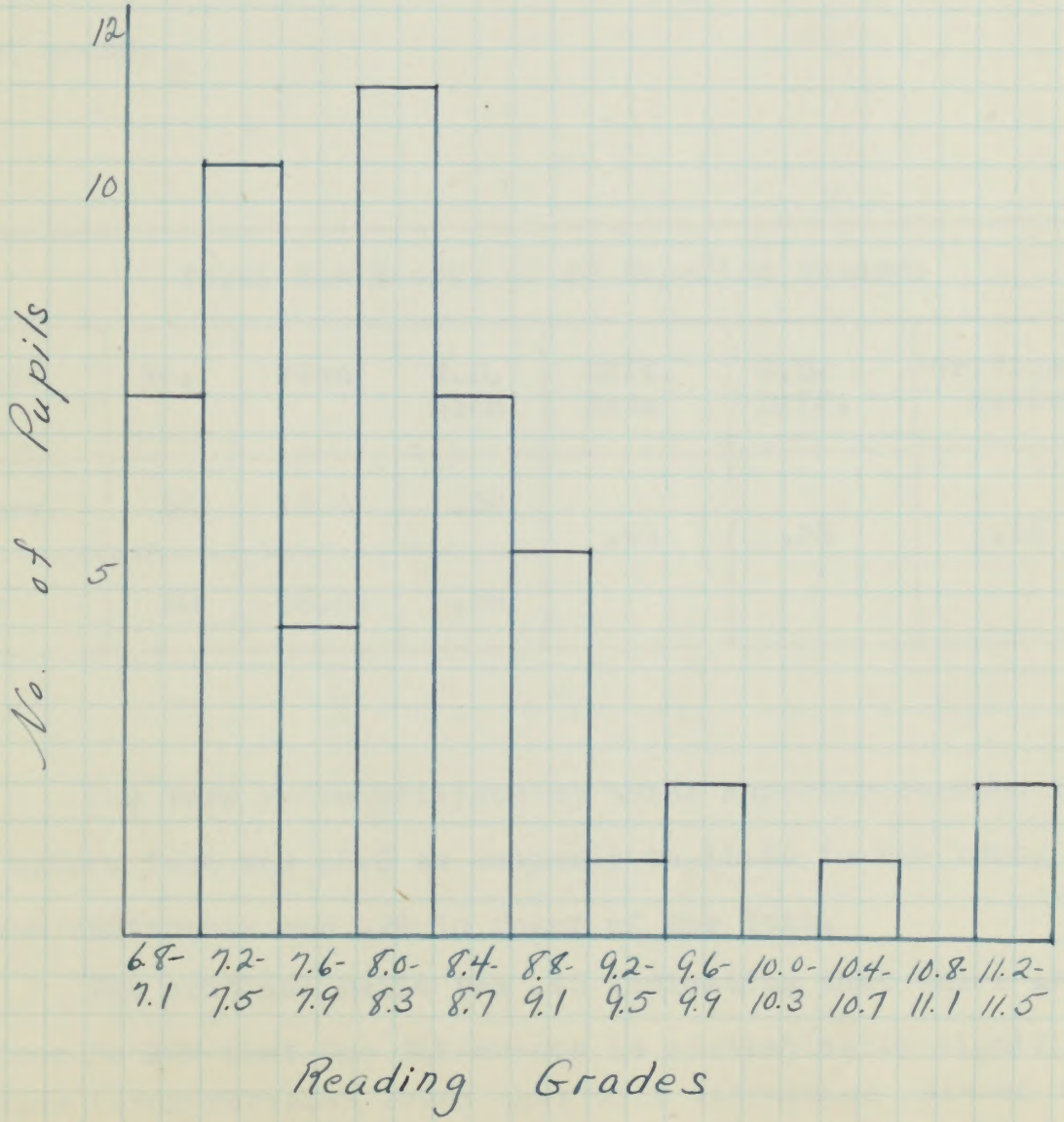


TABLE V

Comparison of 50 Superior Readers in Memory and Text

The reading grade distribution for these superior readers is drawn up in graph form in Figure on the preceding page. The range was from sixth grade, eighth month to eleventh grade, fifth month with a mean reading grade of eighth grade, first month.

Total Raw Scores of 50 Superior Readers						
Test	No.	Mean	S.D. Mean	Diff. Mean	S.D. Diff.	Critical Ratio
Memory	50	15.3	.39	.24	.53	.45
Text	50	15.54	.36			

The mean score obtained by these superior readers in the memory test was 15.3 as compared to 15.54 in the text. The slight difference was .24 in favor of the text.

The critical ratio was .45 indicating that there are 69 chances in 100 that the difference is statistically significant. Further interpretation shows that this difference between the means is of no statistical importance.

Total raw scores of 80 Superior readers						
Test	No.	Mean	S.D. Mean Diff.	Diff. Mean	S.D. Diff.	Critical Ratio
Memory	40	18.3	.30	.24	.25	.96
Rate	80	10.24	.20			

FIGURE 4

Distribution of Reading Grades for 50 Poor Fifth Grade Readers

Range = 3grs. 6 mos. to 6grs. 3 months

Mean = 5 grs. 1 mo.

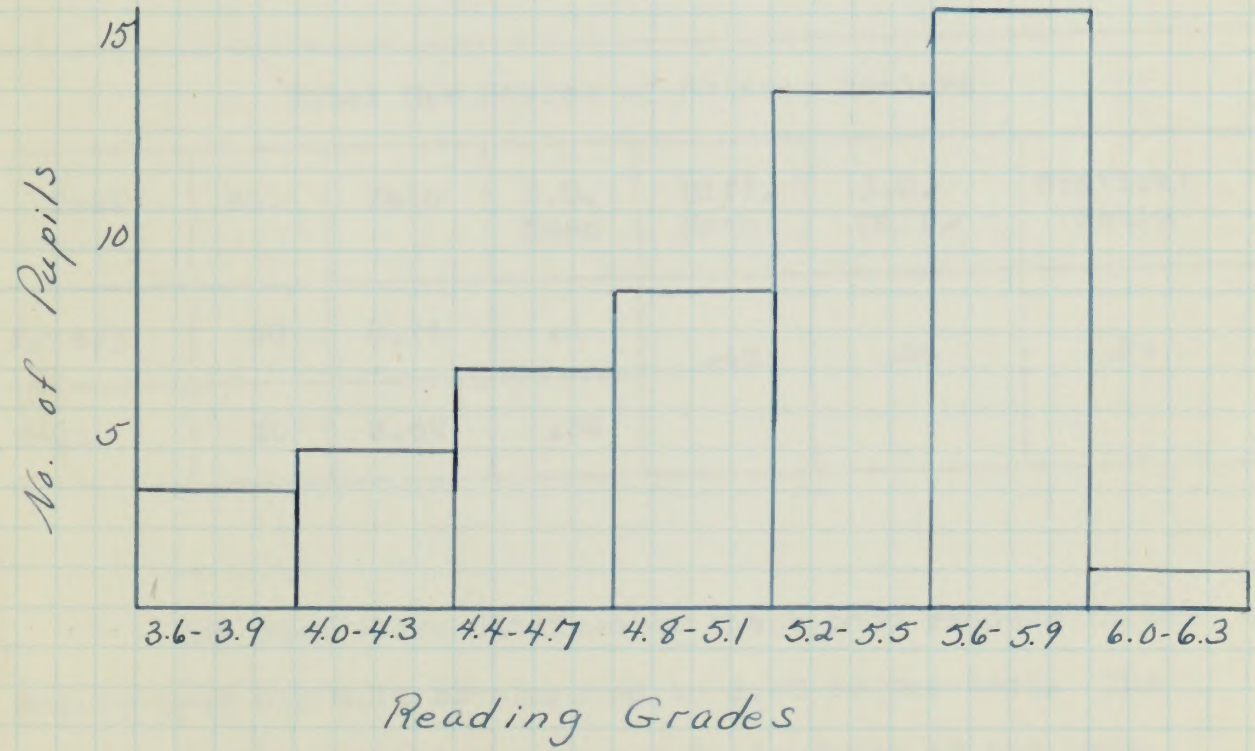


TABLE VI

Comparison of 50 Poor Readers in Memory and Text

The reading grade distribution for these poor readers is drawn up in graph form in Figure on the preceding page. The range was from third grade, sixth month to sixth grade, third month with a mean reading grade of fifth grade, first month.

Total Raw Scores of 50 Poor Readers						
Test	No.	Mean	S.D. Mean	Diff. Mean	S.D. Diff.	Critical Ratio
Memory	50	8.14	.4	.48	.56	.86
Text	50	8.62	.39			

The mean score obtained by these poor readers in the memory test was 8.14 as compared to 8.62 in the text. The difference between the means was .48 in favor of the text.

The critical ratio of .86 indicates that there are 80 chances in 100 that the difference is statistically significant. Further interpretation shows that this difference between the means is of no statistical importance.

TABLE VI

Comparison of 30 Poor Readers in Memory and Text

Test	No.	Mean	S.D. Mean Diff.	S.D. Diff.	Critical Ratio
Memory	30	8.14	.4	.08	.80
Text	30	8.80	.39		

TABLE VII

Comparison of Superiority of Text over Memory for Good and Poor Readers

Superiority of Text Over Memory						
Subjects	No.	Mean Diff.	S.D. Diff.	Diff. of Diff.	S.D. Diff.D.	Critical Ratio
Superior Readers	50	.24	.53	.24	.76	.32
Poor Readers	50	.48	.56			

The mean difference between memory and text for the 50 superior readers was .24 as compared with a mean difference of .48 for the same number of poor readers. The difference between these two means was .24 in favor of the poor readers.

The critical ratio was .32 indicating that there are 60 chances in 100 that this difference is statistically significant. Further interpretation shows that this difference between the means is of no statistical importance.

TABLE VIII

Comparison of Reading Grade Equivalents in Memory and Text

A distribution of the reading grades for the 158 children used in this study is found in Figure , page .

Reading Grades						
Test	No.	Mean	S.D. Mean	Diff. Mean	S.D. Diff.	Critical Ratio
Memory	158	6.9	2.23	.05	1.03	.05
Text	158	6.85	2.4			

The mean reading grade equivalent obtained from the memory test is 6.9 as compared to 6.85 obtained from the text. A minor difference of .05 is in favor of the memory test.

The critical ratio of .05 indicates that there are 52 chances in 100 that this difference is statistically significant. Further interpretation shows that this difference between the means is of no statistical importance.

Reading Grade						
Test	No.	Mean	S.D.	Mean Diff.	S.D. Diff.	Critical Ratio
Memory	138	6.9	3.39	.05	1.03	.05
Text	138	6.85	3.4			

TABLE OF CORRELATIONS *

FACTORS	r	P.E.$_r$
1. Reading Achievement with Grade Equivalents in Memory	.78	±.22
2. Reading Achievement with Grade Equivalents in Text	.88	±.12
3. High Achievement with Memory	.50	±.40
4. High Achievement with Text	.72	±.26
5. Low Achievement with Memory	.295	±.50
6. Low Achievement with Text	.83	±.18
7. Amount of Material Read with Memory	.699	±.28
8. Amount of Material Read with Text	.35	±.47

* All correlations for this study were figured by the Pearson Product Moment Method.

Relation of Reading Achievement with Grade Equivalents in Memory

$r = .78 \pm .22$

A high positive correlation of .78 is statistically significant. As might be expected the scores obtained from the memory test go hand in hand with the reading achievement.

Relation of Reading Achievement with Grade Equivalents in Text

$r = .88 \pm .12$

A very high positive correlation of .88 shows that the grade equivalents translated from raw scores in the text are very closely related to reading achievement.

It is interesting to note here that although there was a high correlation between reading achievement and grade equivalents in both memory and text, the correlation of achievement with text was one point higher than that computed with memory. This indicates that the text test compares more favorably with reading achievement than does the experimental memory test.

Relationship of High Reading Achievement with Memory

(50 Superior Readers)

$r = .50 \pm .40$

.50 shows a significant relationship between high achievement in reading and grade equivalent in the memory test.

Relationship of High Reading Achievement with Text

(50 Superior Readers)

$r = .72 \pm .26$

This high positive correlation of .72 implies that the superior pupil's reading achievement level very closely parallels his grade equivalent as determined from raw score in the text test.

Considering both of the above relationships, whose difference is as much as .22, it becomes evident that the superior pupil's reading achievement correlates more closely with his score in the text than with his score in the memory test.

Relationship of Low Reading Achievement with Memory

(50 Poor Readers)

$r = .295 \pm .50$

.295 is a low correlation of little statistical implication showing that there is only a minor relationship between the reading achievement level of poor readers and their grade equivalent score in the memory test.

Relationship of Low Reading Achievement with Text

(50 Poor Readers)

$r = .83 \pm .18$

This very high positive correlation of .83 between the reading achievement of poor readers and their grade equivalent score in the text denotes a very definite proximity in these two factors.

As in the correlations of the superior readers we again note the result of this experiment as giving decided favor to the text when correlations between poor readers and their reading achievement are computed. The difference between the above two correlations is .535 showing even a greater variance when considering poor readers rather than superior readers.

Relationship of Amount of Material Read with Memory

$$r = .699 \pm .28$$

The high correlation coefficient of .699 indicates a decidedly close parallel between the number of selections the pupil read and his score in the memory test.

Relationship of Amount of Material Read with Text

$$r = .35 \pm .47$$

.35 is a low correlation of no statistical significance denoting a minor relationship between the number of selections read by the pupil and his score in the text test.

In considering the above two correlations it appears that while there is a definite relationship with the amount of material read and the memory scores there is no significant relationship between the amount of material read and the text scores. This would imply that the pupils' scores in the memory test were dependent upon the number of selections read. In the text test, however, the pupils' scores were not dependent upon the number of selections read. This may be accounted for by the fact that the pupils, knowing they had but one chance to read a selection, might read more slowly and more carefully thus

obtaining a score more comparable to the number of selections read. In reading the selections in the text test, the pupils might skim hurriedly over many paragraphs but fail to answer questions proportionately.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study as previously stated was to compare the accuracy and amount of recall on material the pupil read once and material allowed to remain before him constantly. The term "memory" was used to refer to the experimental test dealing with only one reading, and the term "text" was used in referring to the test material taken verbatim from a standard test proper. Sub-test 4 of the standardized Iowa Silent Reading Test for Grades 1 to 4 was used for the reading and recall material employed in both measures. These two types of tests were presented to 158 fifth grade children.

Further comparisons were noted between main ideas and details recalled, amount of material covered, and recall of superior readers and poor readers. Relationship of reading achievement was computed with memory and with text. Relationships of high and low achievement with memory and with text were also determined. Finally, the correlations between the amount of material read and memory and text scores were calculated.

Conclusions

The conclusions drawn from the analysis in the previous chapter may be stated as follows:

1. There is no statistical difference between the total recall from memory and the total recall from text.
2. Recall of the main idea was slightly superior in memory. The difference between the two means being .26 which is not of statistical significance.
3. The critical ratio of the difference between the amount of recall in details was 2.0 which, although not of statistical significance, shows a tendency for these pupils to score higher in memory when seeking details.
4. There is no statistical significance between the amount of selections covered in memory and in text.
5. Superior readers and poor readers both show a preference for the text although neither difference is of any statistical significance.
6. The difference between the mean grade equivalents obtained from memory and text is of no statistical significance.
7. There is a high correlation of .78 $\pm$.22 between reading achievement and memory.
8. There is an even higher correlation of .88 $\pm$.12

between reading achievement and text.

9. There is a fairly high correlation of .50 ±.40 between high reading achievement and memory.
10. There is a considerably higher correlation of .72 ±.26 between high reading achievement and text.
11. The correlation of .295 ±.50 shows very little relationship between low reading achievement and memory.
12. There is a very high correlation of .83 ±.18 between low reading achievement and text.
13. There is a high correlation of .699 ±.28 between amount of material read and memory scores.
14. The low correlation of .35 ±.47 shows very little relationship between amount of material read and text scores.

Interpretation of Conclusions

Contrary to the writer's expectations these conclusions show that according to the material used for this study there is no difference between recall of material read only once and recall of material constantly before the pupil. The writer believed the scores would prove to be significantly lower in the memory test. Furthermore, none of the differences analyzed indicate any statistical significance.

There are several factors concerning the material used which might be pertinent to this lack of difference. The paragraphs are brief consisting of only 80 to 100 running words making it fairly easy for the pupil to recall on the comprehension check. There was no delay in the recall of the memory test. Upon completing the reading the child immediately reversed the card and checked the comprehension items. The level of recall itself was easily handled, the items being of a multiple choice nature consisting of statements or questions requiring the child to select the correct answer from only three choices. The possibility of the cards being a novelty and thus motivating the speed of reading might have been a relevant factor.

One or all of these factors may have affected this experiment to the extent of equalizing the results. However, the study as described in the preceding chapters shows no significant difference between recall from memory and recall from text as based on results of these 158 fifth grade children tested.

CHAPTER V

SUGGESTIONS FOR FURTHER STUDY

1. Perform the same type of experiment with selections of a greater length.

2. Perform the same type of experiment but delay the recall over a specified length of time.

3. Perform the same type of experiment but remove all time elements.

4. Perform the same type of experiment on a population showing a retardation in reading achievement.

5. Perform the same type of experiment with material of a narrative nature.

6. Perform the same type of experiment with pupils on a lower grade level.

BIBLIOGRAPHY

Books

1. Broom, M. E. Educational Measurements in the Elementary School; McGraw Hill Co., New York, 1939.

2. Cavin, Grace Analysis of Intermediate Grade Reading Tests, B. U. Thesis, 1940.

3. Courtney, P. D. Recall by Reproduction vs. Recognition; B.U. Thesis, 1941.

4. Dietze, A. G. Factual Memory of Secondary School Pupils for a Short Article Which They Read a Single Term; Doctorate Thesis, University of Pittsburg, 1930.

5. Greene, H. A., Jorgensen, A. N., and Gerberich, J. R., Measurement and Evaluation in the Elementary School; Longmans, Green and Co., New York, 1942.

6. Harris, Albert How to Increase Reading Ability; Longmans, Green and Co., New York, 1940.

7. Joney, Olive L. Comparison of Reading and Listening in Teaching Factual Materials in Grade Four; B. U. Thesis, 1942.

8. Webb, L. W., and Shotwell, A. M., Standard Tests in the Elementary School; Longand Smith Inc., New York, 1932.

9. Yoakam, Gerald A. Reading and Study; Macmillan Co., New York, 1929.

10. Yearbook No. 20 National Society for the Study of Education, Part II, Public School Publishing Co., Bloomington, Ill., 1924.

Articles

1. Good, Carter V., "The Effect of a Single Reading Versus Two Readings of a Given Body of Material," Journal of Educational Method, vol V, pp.325-329, April, 1926.

2. Gray, William S., "The Relation Between Study and Reading," Proceedings of the N. E. A. Association, Vol 57: 580-586, 1919.

3. Gray, William S., "The Importance of Silent Reading," Elementary School Journal, vol 24: 348-356, January, 1924.

Standardized Tests

1. Detroit Reading Test III, Grades 4-6, World Book Co., New York, 1927.

2. Durrell-Sullivan Reading Achievement Test, Grades 3-6, World Book Co., New York, 1937.

3. Gates Silent Reading Tests, Grades 3-8, Bureau of Publications, Teachers College, Columbia University, New York, 1929.

4. Iowa Silent Reading Tests, Elementary Revised, Grades 4-9, World Book Co., New York, 1939.

5. Los Angeles Elementary Reading Tests, Grades 3-4, California Test Bureau, Los Angeles, California, 1926.

6. Munroe Standardized Silent Reading Tests I (Revised) Grades 3-5, World Book Co., New York, 1933.

7. Nelson Reading Test, Grades 3-8, Houghton Mifflin Co., Boston, Mass., 1931.

8. New Stanford Reading Test, Grades 2-9, World Book Co., New York, 1929.

9. Public School Achievement Tests, Grades 3-8, Public School Publishing Co., Bloomington, Ill., 1930.

10. Sangren-Woody Reading Test, Grades 4-8, World Book Co., New York, 1927.

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